

Unit Planning Guide: Grade 5 Unit 6 of 9

Unit Title: Patterns and Algebra	Pacing (Duration of Unit): 3 Weeks
Grade: 5	Buffer Day(s): 1 week

Desired Results

Transfer Goals (Priority practice standards in **bold**)

Students will be able to independently use their learning to:

- MP.1. **Make sense of problems and persevere in solving them.**
- MP.2. **Reason abstractly and quantitatively.**
- MP.3. Construct viable arguments and critique the reasoning of others.
- MP.4. Model with mathematics.
- MP.5. Use appropriate tools strategically.
- MP.6. **Attend to precision.**
- MP.7. **Look for and make use of structure.**
- MP.8. Look for and express regularity in repeated reasoning.

Established Goals (2011 MA Curriculum Frameworks Standards Incorporating the Common Core State Standards)

Prerequisite Standards:

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Standards (Priority Standards in **bold**):

- 5.G.1: Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).

WIDA for English Language Learners

Standard 1: ELLs **communicate** for **Social** and **Instructional** purposes within the school setting

Standard 3: ELLs **communicate** information, ideas and concepts necessary for academic success in the content area of **Mathematics**

In the lesson planning stage, teachers will need to differentiate lessons for ELLs. In order to accomplish this they will need: 1.) this curriculum map, 2.) a list of their ELLs and their proficiency levels, and 3.) appropriate language

<ul style="list-style-type: none"> • 5.G.2: Represent real-world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation. • 5.OA.1: Use parentheses, brackets, or braces in numerical expressions, and evaluate expressions with these symbols. • 5.OA.2: Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. <i>For example, express the calculation “Add 8 and 7, then multiply by 2” as $2 \times (8 + 7)$. Recognize that $3 \times (18932 + 921)$ is three times as large as $18932 + 921$, without having to calculate the indicated sum or product.</i> • 5.OA.3: Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. <i>For example, given the rule “Add 3” and the starting number 0, and given the rule “Add 6” and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.</i> 	function expectations and scaffolds or supports.

Meaning (*Mostly assessed through Performance Tasks/Assessments)

<p>Big Ideas:</p> <ul style="list-style-type: none"> • The order of operations is needed to evaluate expressions involving addition, subtraction, multiplication, division and parentheses/brackets/braces. • Graphing on the coordinate grid is a patterned way to represent real life contexts. • On a graph a point represents the two facets of information associated with an ordered pair. 	<p>Essential Questions: (Questions which frame ongoing and important inquiries about the big ideas. They are written for students and used in daily instruction to help engage students in meaningful thinking.)</p> <ul style="list-style-type: none"> • How do coordinate grids help you organize information? • How can we use numerical expressions to represent real-life situations?
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Acquisition (*Mostly assessed through traditional summative assessments)

Knowledge: Key basic concepts, facts, and key terms (written in phrases) students should be able to recall independently.

Students will know...

- Order of Operations involving addition, subtraction, multiplication, division and parentheses/brackets/braces
- Data is represented by ordered pairs, tables and/or graphs

Key Academic Vocabulary:

- Ordered pair
- Coordinate Plane/Coordinate System
- Parentheses, Bracket, Braces
- Quadrant
- Origin
- X-axis, Y-axis
- Horizontal
- Vertical
- Variable
- Coordinates
- Point
- Intersection
- Perpendicular
- Graph

Skills: The discrete skills and process students should be able to use independently

Students will be skilled at:

- Generating patterns using given rules. (Creating)
- Identifying relationships between patterns. (Analyzing)
- Graphing ordered pairs on the first quadrant of the coordinate plane. (Applying)
- Naming and writing ordered pairs. (Remembering)
- Interpreting coordinate values of points in the context of situations. (Evaluating)
- Using parentheses, brackets and braces to write and evaluate numerical expressions. (Applying)

Resource Suggestions:	